

TRANSMITTAL LETTER TO THE UNITED STATES

DESIGNATED/ELECTED OFFICE (DO/EO/US)

CONCERNING A FILING UNDER 35 U.S.C. 371

66309-145-2

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR

10/088669

INTERNATIONAL APPLICATION NO.

PCT/JP00/01452

INTERNATIONAL FILING DATE

September 29, 2000

PRIORITY DATE CLAIMED

October 1, 1999

TITLE OF INVENTION

BRAKING UNIT FOR BICYCLES

APPLICANT(S) FOR DO/EO/US

Massimo PERUZZO and Gilberto PAROLIN

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (24) indicated below.
4. ☐ The US has been elected by the expiration of 19 months from the priority date (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c) (2))
 - a. ☒ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☒ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
 - a. ☒ is attached hereto.
 - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))
 - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).
11. ☒ A copy of the International Preliminary Examination Report (PCT/IPEA/409).
12. ☒ A copy of the International Search Report (PCT/ISA/210).

Items 13 to 20 below concern document(s) or information included:

13. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
14. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
15. ☒ A **FIRST** preliminary amendment.
16. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
17. ☐ A substitute specification.
18. ☐ A change of power of attorney and/or address letter.
19. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.
20. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
21. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
22. ☐ Certificate of Mailing by Express Mail
23. ☒ Other items or information:

Small Entity Declaration; 6 sheets of drawings; PCT Written Opinion; WO 01/24885.

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR

10/088669

INTERNATIONAL APPLICATION NO.

PCT/IP00/01452

ATTORNEY'S DOCKET NUMBER

66309-145-2

24. The following fees are submitted:

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :

- ☐ Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO \$1040.00
- ☒ International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$890.00
- ☐ International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$740.00
- ☐ International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$710.00
- ☐ International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00

ENTER APPROPRIATE BASIC FEE AMOUNT =

\$890.00

Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492 (e)).

\$0.00

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE
Total claims	14 - 20 =	0	x \$18.00
Independent claims	1 - 3 =	0	x \$84.00
Multiple Dependent Claims (check if applicable).			<input type="checkbox"/>

\$0.00

TOTAL OF ABOVE CALCULATIONS =

\$890.00

☒ Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.

\$445.00

SUBTOTAL =

\$445.00

Processing fee of \$130.00 for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492 (f)).

\$0.00

TOTAL NATIONAL FEE =

\$445.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable).

\$40.00

TOTAL FEES ENCLOSED =

\$485.00

Amount to be:	\$
refunded	
charged	\$

- a. ☐ A check in the amount of _____ to cover the above fees is enclosed.
- b. ☒ Please charge my Deposit Account No. 04-2223 in the amount of \$485.00 to cover the above fees. A duplicate copy of this sheet is enclosed.
- c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 04-2223. A duplicate copy of this sheet is enclosed.
- d. ☐ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

John P. DeLuca
DYKEMA GOSSETT PLLC
Third Floor West, Franklin Square
1300 I Street, N.W.
Washington, DC 20005-3306
(202) 906-8600

SIGNATURE

John P. DeLuca

NAME

25,505

REGISTRATION NUMBER

3-21-02
DATE

66309-145-2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)	PATENT
Massimo PERUZZO et al.)	Group: Unassigned
Serial No. Unassigned)	Examiner: Unassigned
Filed: Herewith)	

BRAKING UNIT FOR BICYCLES

* * * * *

PRELIMINARY AMENDMENT

Washington, D.C.
March 21, 2002

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination on the merits, please amend the Application as follows:

IN THE CLAIMS:

Please amend the claims as follows:

1. (Amended) A braking assembly for bicycles (B) particularly adapted for training of cyclists, constrained to a support structure and provided with braking means cooperating with the driving wheel (R) of said bicycle (B) to generate a resisting torque opposing the rotation applied by the cyclist to said driving wheel (R) through the pedals (P), said braking means comprising at least a flexible belt with mainly longitudinal development arranged with perimetral adherence to tyre (C) of said driving wheel (R) for at least a portion of its circumference and wound as a closed loop between at least a couple of to revolving rollers, at least one of said rollers being operatively connected to energy dissipation means, said couple of revolving rollers being part of a rigid frame supported by a support bracket constrained to said support structure, said couple of revolving

rollers comprising a first roller operatively connected to said energy dissipation means and a second roller, said flexible belt being wound between said rollers, said rollers having substantially horizontal and parallel rotation axes, said rigid frame being connected to said support bracket through adjustment means adapted to change its position in respect of said type (C) of said driving wheel (R), wherein said energy dissipation means comprise a disc of a magnetic material fixedly keyed to said first roller with the surface arranged, between a couple of magnetic pieces supported by a moveable fork integral with said rigid frame and connected to actuating means adapted to move said magnetic pieces in respect of said disc.

2. (Amended) The braking assembly according to claim 1, wherein said amagnetic disc is connected to said first roller through a fly wheel with cooling fan, both coaxial with said first roller.

3. (Amended) The braking assembly according to claim 1, wherein said disc of amagnetic material is arranged inside a case fixed to said rigid frame and provided with guide means for sliding said moveable fork.

4. (Amended) The braking assembly according to claim 1, wherein said actuating means comprise a flexible wire fixed at one end to said moveable fork and at the opposite end to a control lever supported by the handlebar of said bicycle (B).

5. (Amended) The braking assembly according to claim 1, wherein said rigid frame is connected to said support bracket also through blocking means adapted to fix said frame in the position defined by said adjustment means.

6. (Amended) The braking assembly according to claim 1, wherein said adjustment means comprise at least a screw with control means integral with said support bracket, said screw being coupled with a nut-screw fixed to said rigid frame.

7. (Amended) The braking assembly according to claim 5, wherein said blocking means comprise at least a screw protruding from said rigid frame and threaded in a slit made in said support bracket to which is fixed through a nut-screw with control handle.

8. (Amended) The braking assembly according to claim 1, wherein said first roller on its outer surface has grooves cooperating with corresponding grooves made on the inner surface of said flexible belt.

9. (Amended) The braking assembly according to claim 1, wherein said revolving rollers have the corresponding rotation axes arranged at the same distance (d) from the hub of said driving wheel (R) for any position in which said frame places the flexible belt adhering to said tyre (C).

10. (Amended) The braking assembly according to claim 1, wherein said rigid frame comprises a couple of parallel side members rigidly connected to one another through a couple of fixed pins each of them being the pivot pin of a corresponding roller.

11. (Amended) The braking assembly according to claim 1, wherein said support bracket consists of a couple of facing half brackets between which said rigid frame is arranged.

12. (Amended) The braking assembly according to claim 11, wherein said support bracket is fixed to a support stand supporting said bicycle (B) arranging it in a vertical fixed position with the driving wheel (R) raised from the ground (T).

13. (Amended) The braking assembly according to claim 12, wherein said support stand supports said bicycle (B) at the hub (M) of the driving wheel (R).

14. (Amended) The braking assembly according to claim 11, wherein said support bracket is fixed to the back fork (F) of the frame of said bicycle (B).

Please remove multiple dependencies from the claims. If any multiple dependent claims remain after amendment, such multiple dependent claims should refer only to the next previous claim.

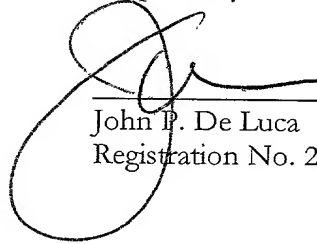
REMARKS

This Amendment is for the purpose of removing multiple dependencies and reference numerals from the claims and for placing the claims in appropriate U.S. format.

Allowance of the claims is earnestly solicited.

If filing this paper or any accompanying papers necessitates additional fees not otherwise provided for, the undersigned authorizes the Commissioner to deduct such additional fees from Deposit Account No. 04-2223.

Respectfully submitted,



John P. De Luca
Registration No. 25,505

DYKEMA GOSSETT PLLC
1300 I STREET N.W.
SUITE 300 W
WASHINGTON, D.C. 20005
(202) 906-8600

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

1)]. (Amended) A braking assembly [(1)] for bicycles (B) particularly adapted for training of cyclists, constrained to a support structure [(2;F)] and provided with braking means [(3)] cooperating with the driving wheel (R) of said bicycle (B) to generate a resisting torque opposing the rotation applied by the cyclist to said driving wheel (R) through the pedals (P), said braking means [(3)] comprising at least a flexible belt [(4)] with mainly longitudinal development arranged with perimetral adherence to tyre (C) of said driving wheel (R) for at least a portion of its circumference and wound as a closed loop between at least a couple of revolving rollers [(5, 6)], at least one of said rollers being operatively connected to energy dissipation means [(7)], said couple of revolving rollers [(5, 6)] being part of a rigid frame [(8)] supported by a support bracket [(9)] constrained to said support structure [(2; F)], said couple of revolving rollers comprising a first roller [(5)] operatively connected to said energy dissipation means [(7)] and a second roller [(6)], said flexible belt [(4)] being wound between said rollers, said rollers [(5, 6)] having[,] substantially horizontal and parallel rotation axes [(5b, 6b)], said rigid frame [(8)] being connected to said support bracket [(9)] through adjustment means [(110)] adapted to change its position in respect of said type (C) of said driving wheel (R), wherein said energy dissipation means [(7)] comprise a disc [(14)] of a magnetic material fixedly keyed to said first roller [(5)] with the surface arranged, between a couple of magnetic pieces [(17a, 17b)] supported by a moveable fork [(18)] integral with said rigid frame [(8)] and connected to actuating means [(22)] adapted to move said magnetic pieces [(17a, 17b)] in respect of said disc [(14)].

2)]. (Amended) The braking assembly [(1)] according to claim 1)], wherein said amagnetic disc [(14)] is connected to said first roller [(5)] through a fly wheel [(15)] with cooling fan [(16)], both coaxial with said first roller [(5)].

3D]. (Amended) The braking assembly [(1)] according to claim 1D], wherein said disc of amagnetic material [(14)] is arranged inside a case [(20)] fixed to said rigid frame [(8)] and provided with guide means [(19)] for sliding said moveable fork [(18)].

4D]. (Amended) The braking assembly [(1)] according to claim 1D], wherein said actuating means [(22)] comprise a flexible wire [(22a)] fixed at one end to said moveable fork [(18)] and at the opposite end to a control lever [(22b)] supported by the handlebar of said bicycle (B).

5D]. (Amended) The braking assembly [(1)] according to claim 1D], wherein said rigid frame [(8)] is connected to said support bracket [(9)] also through blocking means [(11)] adapted to fix said frame in the position defined by said adjustment means [(10)].

6D]. (Amended) The braking assembly [(9)] according to claim 1D], wherein said adjustment means [(10)] comprise at least a screw [(24, 25)] with control means [(24a, 25a)] integral with said support bracket [(9)], said screw being coupled with a nut-screw [(29, 30)] fixed to said rigid frame [(8)].

7D]. (Amended) The braking assembly [(1)] according to claim 5D], wherein said blocking means [(11)] comprise at least a screw [(31, 32)] protruding from said rigid frame [(8)] and threaded in a slit [(33, 34)] made in said support bracket [(9)] to which is fixed through a nut-screw [(35, 36)] with control handle [(35a, 36a)].

8)]. (Amended) The braking assembly [(1)] according to claim 1)], wherein said first roller [(5)] on its outer surface has grooves [(5a)] cooperating with corresponding grooves [(4a)] made on the inner surface of said flexible belt [(4)].

9)]. (Amended) The braking assembly [(1)] according to claim 1)], wherein said revolving rollers [(5, 6)] have the corresponding rotation axes [(5b, 6b)] arranged at the same distance (d) from the hub of said driving wheel (R) for any position in which said frame [(8)] places the flexible belt [(4)] adhering to said tyre (C).

10)]. (Amended) The braking assembly [(1)] according to claim 1)], wherein said rigid frame [(8)] comprises a couple of parallel side members [(8a, 8b)] rigidly connected to one another through a couple of fixed pins [(12, 13)] each of them being the pivot pin of a corresponding roller [(5, 6)].

11)]. (Amended) The braking assembly [(1)] according to claim 1)], wherein said support bracket [(9)] consists of a couple of facing half brackets [(26, 27)] between which said rigid frame [(8)] is arranged.

12)]. (Amended) The braking assembly [(1)] according to claim 11)], wherein said support bracket [(9)] is fixed to a support stand [(2)] supporting said bicycle (B) arranging it in a vertical fixed position with the driving wheel (R) raised from the ground (T).

13)]. (Amended) The braking assembly [(1)] according to claim 12)], wherein said support stand [(2)] supports said bicycle (B) at the hub (M) of the driving wheel (R).

14)]. (Amended) The braking assembly [(1)] according to claim 11)], wherein said support bracket [(9)] is fixed to the back fork (F) of the frame of said bicycle (B).

50313.1

10088669

BRAKING UNIT FOR BICYCLES

The invention relates to a bicycle braking assembly to carry out training of cyclists.

It is known that cyclists wanting to train using their own bicycle, are using proper braking assemblies that are engaged with the driving wheel to obtain an adjustable resisting torque opposing its rotation carried out with the pedals.

GB-475207 discloses an excercises machine, particularly a bicycle, where the driving wheel engages and drives a movable support comprising an endless band carried by rollers.

More particularly the braking assemblies of known type are applied to braking stands used in gymnasias and generally in closed rooms, comprising a tripod supporting the bicycle which is arranged in a vertical position with the driving wheel raised from the ground and engaged with the braking means.

According to the state of the art devices, the braking assemblies comprise one or more rollers with a substantially horizontal axis contacting the tyre of the driving wheel and connected to an electromagnetic, hydraulic or mechanical brake provided with regulation means adapted to change the resisting torque. The above mentioned braking assemblies however have some drawbacks.

A first drawback consists in that in use a friction is generated between the wheel and the braking rollers so that the tyre is quickly deteriorated.

Since primarily in racing bicycles the tyres are made of special materials and therefore are particularly expensive, this is clearly an unnecessary rise of costs for the user.

A further drawback consists in that in use a considerable noise is generated that sometimes cannot be tolerated for instance when the braking assembly is applied on braking stands used in gymnasias and generally in closed rooms.

Use of the above mentioned braking assemblies is particularly problematic when they are used with bicycles like mountain bikes provided with tyres having a tread with deep grooves.

In such a case in addition to the considerable wear of the tyre of the driving wheel and greater operation noise, annoying vibrations are also generated, that are transmitted to bicycle and cyclist who is obliged to pedal in uncomfortable conditions.

In an effort to remove such drawbacks, braking assemblies were made in which the braking rollers are contacted with the rim of the driving wheel instead

- 1a -

of the tyre.

More particularly the braking assembly comprises a couple of opposed contrasting rollers that are holding a grip with the edge of the rim of the driving

B
O
N
I
N
I
I
T
A
L
Y

of the tyre.

More particularly the braking assembly comprises a couple of opposed contrasting rollers that are holding a grip with the edge of the rim of the driving wheel that is kept raised from the ground by a stand fixed to the hub.

- 5 The above mentioned braking assemblies with opposed rollers and related braking stands are actually solving the problem of noise and tyre wear and can be used both for racing bicycles and bicycles of mountain bike type.

However these assemblies have further drawbacks, one being the fact that braking assemblies with lateral rollers have costs that are considerably higher
10 than the braking assemblies with rollers tangent to the wheel and this is due to their greater mechanical complexity.

A further drawback consists in that fitting the bicycle on the braking stand using said braking assemblies, is less easy and quick because it is necessary to use a particular device being part of the braking assembly, adapted to spread the
15 contrasting rollers in order to place the wheel between the rollers.

Last but not least drawback consists in that a friction is generated between rim and rollers, obliging user to replace said rollers from time to time in order to keep the braking assembly always perfectly efficient.

The present invention aims to remove said drawbacks.

- 20 More particularly, a first object of the invention is a bicycle braking assembly that reduces considerably wear of the tyre of the driving wheel contacting the braking means in comparison with the braking assemblies of equivalent known type.

Another object of the invention is a braking assembly having an operation
25 noise lower than the braking assemblies of equivalent known type.

A further object of the invention is a braking assembly inducing less vibrations in the bicycle in use.

Still a further object of the invention is a braking assembly of simpler construction and with more reliable operation in comparison with braking
30 assemblies of known type available on the market and with corresponding performances.

These objects are attained by a bicycle braking assembly particularly suitable for training of cyclists, that according to the main claim is constrained to a support structure and is provided with braking means cooperating with the
35 bicycle driving wheel so as to generate a resisting torque opposing the rotation

applied by the cyclist to said driving wheel through the pedals wherein said braking means comprise at least a flexible belt with mainly longitudinal development arranged with a perimetral adherence to tyre of said driving wheel for at least a portion of its circumference and wound as a closed loop between at least a couple of rotating rollers, at least one of said rollers being operatively connected to energy dissipation means.

According to a preferred embodiment the rotating rollers are belonging to a rigid frame supported by a support bracket which is constrained to the support structure.

The braking assembly is preferably used with a braking stand comprising a tripod supporting the bicycle at the hub of the driving wheel and keeping the bicycle in a vertical position with the driving wheel raised from the ground.

The tripod is the support structure to which the support bracket of the braking assembly is fixed.

Proper adjustment means of the screw and nut screw type allow to change the position of the rigid frame and consequently of the flexible belt in respect of the driving wheel so as to adjust the braking stand to the different size of the bicycles.

The couple of revolving rollers comprises a first roller with an internal grooved surface connected to energy dissipation means and a second roller with outer smooth surface, parallel to one another and revolving around fixed rotation axes of the rigid frame.

The energy dissipation means comprise a disc of amagnetic material, preferably aluminum, fixedly keyed to the first roller and arranged between a couple of magnetic pieces supported by a moveable fork that can be moved by actuating means in respect of the disc. Such actuating means comprise an operating lever fixed to the bicycle frame and driving a flexible wire that moves the fork so as to change the surface area of the magnetic pieces and of the facing disc.

According to a mentioned embodiment the braking assembly of the invention may be applied to a support stand of a bicycle arranged with the driving wheel raised from the ground, so as to obtain a braking stand allowing training of cyclists in gymnasium or in domestic rooms.

According to another embodiment, the braking assembly of the invention may be fixed to the bicycle frame so as to obtain braking of the driving wheel when

the bicycle is running on the road.

The braking assembly of the invention advantageously shows a quieter operation and reduces tyre wear in view of the elastic contact between tyre and belt.

5 The braking assembly of the invention is also more reliable than the braking assemblies of known type as it comprises a lower number of components.

The braking assembly of the invention has also a less expensive construction and requires less maintenance in respect of the braking assemblies of equivalent known type.

10 The foregoing objects and advantages will be better understood from the description of a preferred embodiment of the invention that is given as an illustrative non-limiting example with reference to the accompanying sheets of drawings in which:

- FIG. 1 is a side view of the braking assembly of the invention applied to a bicycle arranged in a fixed vertical position;
- 15 - FIG. 2 is a vertical sectional view of a detail of the braking assembly and bicycle of FIG. 1;
- FIG. 3 is a sectional view taken along line III-III of another detail of the braking assembly of FIG. 1;
- 20 - FIG. 4 is an outer view of the detail of FIG. 3;
- FIG. 5 is a sectional view along line V-V of a detail of the braking assembly of FIG. 1; and
- FIG. 6 is a view of a different application of the braking assembly of the invention.

25 The braking assembly of the invention shown in FIG. 1 is generally indicated with reference number 1. The braking assembly is constrained to a support structure comprising a support stand generally indicated with reference number 2 for a bicycle B.

30 The braking assembly 1 together with the support stand 2 constitutes therefore a static braking stand for the bicycle B, where the braking assembly generates a resisting torque opposing the rotation that the cyclist gives to the driving wheel R actuating the pedals P.

According to the invention and with particular reference to FIGS. 2 and 3, the braking means 3 comprise a flexible belt 4 with a mainly longitudinal development arranged with a perimetral adherence to tyre C of the driving

35

wheel **R** for at least a portion of its circumference and wound as a closed loop between a couple of revolving rollers **5**, **6** one of which, more particularly the first revolving roller **5**, is operatively connected to energy dissipation means generally indicated with reference number **7**.

5 The revolving rollers **5**, **6** are part of a rigid frame generally indicated with **8** that can be seen also in FIG. **4**, and define a couple of longitudinal rotation axes **5b**, **6b** parallel to one another.

The rigid frame **8** is supported by a support bracket generally indicated with **9** and steadily fixed to stand **2**, to which the rigid frame **8** is connected through
10 adjustment means generally indicated with **10** adapted to change the position in respect of the driving wheel **R**.

Proper blocking means **11** are fixing the rigid frame **8** in the desired position.

More particularly it can be seen in FIG. **3** that the rigid frame **8** comprises a couple of side members **8a**, **8b** parallel to one another that are rigidly
15 connected through a couple of fixed pins **12**, **13**, each of them being the pivot pin of a corresponding roller **5**, **6** with the intermediate arrangement of rolling bearings **12a**, **12b** and **13a**, **13b** respectively.

More particularly the first roller **5** has an outer surface provided with grooves **5a** cooperating with corresponding grooves **4a** made on the inner surface of
20 the flexible belt **4** while the second roller **6** has an outer smooth surface.

As already mentioned, the first roller **5** is connected to energy dissipation means generally indicated with reference number **7** comprising a disc **14** preferably made of amagnetic material for instance aluminum, fixedly keyed to the first roller through a fly wheel **15** and a cooling fan **16** which is arranged
25 between a couple of magnetic pieces **17a**, **17b** supported by a moveable fork **18** sliding along guide means **19** of a case **20** fixed to the rigid frame **8**.

More particularly case **20** has a protective function as it is so shaped as to contain disc **14**, fly wheel **15**, fan **16** and fork **18** as shown in FIG. **3**.

Fork **18** may slide longitudinally along the guide means **19** in both directions of
30 arrow **21** being connected to actuating means **22** comprising a flexible metal wire **22a** tensioned by an operating lever **22b** fixed to the bicycle handlebar.

With regard to the adjustment means generally indicated with **10**, it can be seen in FIG. **5** that said means comprise a couple of screws **24**, **25**, each of them being integral with a corresponding half bracket **26**, **27** and being
35 coupled to a nut-screw **29**, **30** fixed to the rigid frame **8** at a corresponding side

member **8a, 8b**.

Each screw **24, 25** is arranged in through holes **8c, 8d** made in each corresponding side member **8a, 8b** and is provided at one end with a control hand-wheel **24a, 25a**.

5 As to the blocking means generally indicated with **11** shown in FIGS. **3** and **4**, it can be seen that said means comprise a couple of screws **31, 32** each protruding from the corresponding side member **8a, 8b** of the rigid frame **8** and threaded in a corresponding slit **33, 34** shown in FIGS. **2** and **3** and made in each half-bracket **26, 27** which is fixed through a nut-screw **35, 36** preferably
10 made in a control handle **35a, 36a**.

Locking is obtained by lock-nuts **37, 38**.

The position of the rigid frame **8** is adjusted by acting on the adjustment means **10** so as to cause the flexible belt **4** to adhere to tyre **C** of the driving wheel **R**.

Then the rigid frame **8** is fixed in the adjustment position so obtained through
15 the locking means **11**, so that rollers **5, 6** as shown in FIG. **2** do not contact said wheel and their longitudinal axes **5b, 6b** are arranged at the same distance **d** from hub **M** of the driving wheel **R**.

The cyclist starts pedalling and actuating the lever **23** causes the fork **18** to slide arranging it in any position comprised between the two end positions
20 shown with continuous line and dashed line in FIG. **3** according to the desired resisting force.

Indeed the magnetic pieces **17a, 17b** carry out a magnetic effect induced on the aluminum disc **14** braking the first roller **5** and therefore the belt **4** in proportion to the opposite surface areas of the magnetic pieces and the
25 aluminum disc.

A different application of the braking assembly **1** of the invention is shown in FIG. **6** where the assembly is constrained to the back fork **F** of the frame of the bicycle **B** that in this case constitutes the support structure.

With this application solution the cyclist may perform a dynamic training
30 running with the bicycle on the road.

From the foregoing description it is to be understood that elasticity of contact between tyre **C** and flexible belt **4** reduces wear of tyre **C** and makes operation of the bicycle less noisy.

More particularly noise and wear do not change when on the braking stand
35 racing bicycles or bicycles like mountain bikes with grooved tyre are installed.

It is also to be pointed out that the limited number of components simplifies the mechanical construction and reduces the corresponding costs as well.

Moreover, as the pivot pins of the rollers driving the flexible belt are fixed, a greater operation precision is allowed in comparison with the braking assemblies of known type in which on the contrary the pivot pins supporting the rollers are revolving pins.

Finally the braking assembly of the invention in both embodiments in which it is connected either to the stand supporting the bicycle **B** or to the back fork **F** of the bicycle frame, can be easily adjusted so as to regulate in an optimal way the adherence of the belt to the surface of the tyre of the driving wheel.

It is clear that modifications of structure and shape may be made in carrying out the braking assembly of the invention that should be covered by the present patent when falling in the scope of the appended claims.

- 8 -

CLAIMS

1) A braking assembly (1) for bicycles (B) particularly adapted for training of cyclists, constrained to a support structure (2; F) and provided with braking means (3) cooperating with the driving wheel (R) of said bicycle (B) to generate a resisting torque opposing the rotation applied by the cyclist to said driving wheel (R) through the pedals (P), said braking means (3) comprising at least a flexible belt (4) with mainly longitudinal development arranged with perimetral adherence to tyre (C) of said driving wheel (R) for at least a portion of its circumference and wound as a closed loop between at least a couple of revolving rollers (5, 6), at least one of said rollers being operatively connected to energy dissipation means (7), said couple of revolving rollers (5, 6) being part of a rigid frame (8) supported by a support bracket (9) constrained to said support structure (2; F), said rigid frame (8) being connected to said support bracket (9) through adjustment means (10) adapted to change its position in respect of said tyre (C) of said driving wheel (R), characterized in that said energy dissipation means (7) comprise a disc (14) of amagnetic material fixedly keyed to said first roller (5) with the surface arranged between a couple of magnetic pieces (17a, 17b) supported by a moveable fork (18) integral with said rigid frame (8) and connected to actuating means (22) adapted to move said magnetic pieces (17a, 17b) in respect of said disc (14).

2) The braking assembly (1) according to claim 1) characterized in that said amagnetic disc (14) is connected to said first roller (5) through a fly wheel (15) with cooling fan (16), both coaxial with said first roller (5).

3) The braking assembly (1) according to claim 1) characterized in that said disc of amagnetic material (14) is arranged inside a case (20) fixed to said rigid frame (8) and provided with guide means (19) for sliding said moveable fork (18).

4) The braking assembly (1) according to claim 1) characterized in that said actuating means (22) comprise a flexible wire (22a) fixed at one end to said moveable fork (18) and at the opposite end to a control lever (22b) supported by the handlebar of said bicycle (B).

5) The braking assembly (1) according to claim 1) characterized in that said rigid frame (8) is connected to said support bracket (9) also through blocking means (11) adapted to fix said frame in the position defined by said adjustment means (10).

6) The braking assembly (1) according to claim 1) **characterized in that** said adjustment means (10) comprise at least a screw (24, 25) with control means (24a, 25a) integral with said support bracket (9), said screw being coupled with a nut-screw (29, 30) fixed to said rigid frame (8).

5 7) The braking assembly (1) according to claim 5) **characterized in that** said blocking means (11) comprise at least a screw (31, 32) protruding from said rigid frame (8) and threaded in a slit (33, 34) made in said support bracket (9) to which is fixed through a nut-screw (35, 36) with control handle (35a, 36a).

10 8) The braking assembly (1) according to claim 1) **characterized in that** said couple of revolving rollers comprises a first roller (5) operatively connected to said energy dissipation means (7) and a second roller (6), said flexible belt (4) being wound between said rollers, said rollers (5, 6) having substantially horizontal and parallel rotation axes (5b, 6b).

15 9) The braking assembly (1) according to claim 8) **characterized in that** said first roller (5) on its outer surface has grooves (5a) cooperating with corresponding grooves (4a) made on the inner surface of said flexible belt (4).

20 10) The braking assembly (1) according to claim 1) **characterized in that** said revolving rollers (5, 6) have the corresponding rotation axes (5b, 6b) arranged at the same distance (d) from the hub of said driving wheel (R) for any position in which said frame (8) places the flexible belt (4) adhering to said tyre (C).

25 11) The braking assembly (1) according to claim 1) **characterized in that** said rigid frame (8) comprises a couple of parallel side members (8a, 8b) rigidly connected to one another through a couple of fixed pins (12, 13) each of them being the pivot pin of a corresponding roller (5, 6).

12) The braking assembly (1) according to claim 1) **characterized in that** said support bracket (9) consists of a couple of facing half brackets (26, 27) between which said rigid frame (8) is arranged.

30 13) The braking assembly (1) according to claim 12) **characterized in that** said support bracket (9) is fixed to a support stand (2) supporting said bicycle (B) arranging it in a vertical fixed position with the driving wheel (R) raised from the ground (T).

35 14) The braking assembly (1) according to claim 13) **characterized in that** said support stand (2) supports said bicycle (B) at the hub (M) of the

- 10 -

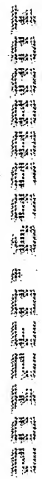
driving wheel (R).

15) The braking assembly (1) according to claim 12) characterized in that said support bracket (9) is fixed to the back fork (F) of the frame of said bicycle (B).

11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000
1001
1002
1003
1004
1005
1006
1007
1008
1009
1010
1011
1012
1013
1014
1015
1016
1017
1018
1019
1020
1021
1022
1023
1024
1025
1026
1027
1028
1029
1030
1031
1032
1033
1034
1035
1036
1037
1038
1039
1040
1041
1042
1043
1044
1045
1046
1047
1048
1049
1050
1051
1052
1053
1054
1055
1056
1057
1058
1059
1060
1061
1062
1063
1064
1065
1066
1067
1068
1069
1070
1071
1072
1073
1074
1075
1076
1077
1078
1079
1080
1081
1082
1083
1084
1085
1086
1087
1088
1089
1090
1091
1092
1093
1094
1095
1096
1097
1098
1099
1100
1101
1102
1103
1104
1105
1106
1107
1108
1109
1110
1111
1112
1113
1114
1115
1116
1117
1118
1119
1120
1121
1122
1123
1124
1125
1126
1127
1128
1129
1130
1131
1132
1133
1134
1135
1136
1137
1138
1139
1140
1141
1142
1143
1144
1145
1146
1147
1148
1149
1150
1151
1152
1153
1154
1155
1156
1157
1158
1159
1160
1161
1162
1163
1164
1165
1166
1167
1168
1169
1170
1171
1172
1173
1174
1175
1176
1177
1178
1179
1180
1181
1182
1183
1184
1185
1186
1187
1188
1189
1190
1191
1192
1193
1194
1195
1196
1197
1198
1199
1200
1201
1202
1203
1204
1205
1206
1207
1208
1209
1210
1211
1212
1213
1214
1215
1216
1217
1218
1219
1220
1221
1222
1223
1224
1225
1226
1227
1228
1229
1230
1231
1232
1233
1234
1235
1236
1237
1238
1239
1240
1241
1242
1243
1244
1245
1246
1247
1248
1249
1250
1251
1252
1253
1254
1255
1256
1257
1258
1259
1260
1261
1262
1263
1264
1265
1266
1267
1268
1269
1270
1271
1272
1273
1274
1275
1276
1277
1278
1279
1280
1281
1282
1283
1284
1285
1286
1287
1288
1289
1290
1291
1292
1293
1294
1295
1296
1297
1298
1299
1300
1301
1302
1303
1304
1305
1306
1307
1308
1309
1310
1311
1312
1313
1314
1315
1316
1317
1318
1319
1320
1321
1322
1323
1324
1325
1326
1327
1328
1329
1330
1331
1332
1333
1334
1335
1336
1337
1338
1339
1340
1341
1342
1343
1344
1345
1346
1347
1348
1349
1350
1351
1352
1353
1354
1355
1356
1357
1358
1359
1360
1361
1362
1363
1364
1365
1366
1367
1368
1369
1370
1371
1372
1373
1374
1375
1376
1377
1378
1379
1380
1381
1382
1383
1384
1385
1386
1387
1388
1389
1390
1391
1392
1393
1394
1395
1396
1397
1398
1399
1400
1401
1402
1403
1404
1405
1406
1407
1408
1409
1410
1411
1412
1413
1414
1415
1416
1417
1418
1419
1420
1421
1422
1423
1424
1425
1426
1427
1428
1429
1430
1431
1432
1433
1434
1435
1436
1437
1438
1439
1440
1441
1442
1443
1444
1445
1446
1447
1448
1449
1450
1451
1452
1453
1454
1455
1456
1457
1458
1459
1460
1461
1462
1463
1464
1465
1466
1467
1468
1469
1470
1471
1472
1473
1474
1475
1476
1477
1478
1479
1480
1481
1482
1483
1484
1485
1486
1487
1488
1489
1490
1491
1492
1493
1494
1495
1496
1497
1498
1499
1500
1501
1502
1503
1504
1505
1506
1507
1508
1509
1510
1511
1512
1513
1514
1515
1516
1517
1518
1519
1520
1521
1522
1523
1524
1525
1526
1527
1528
1529
1530
1531
1532
1533
1534
1535
1536
1537
1538
1539
1540
1541
1542
1543
1544
1545
1546
1547
1548
1549
1550
1551
1552
1553
1554
1555
1556
1557
1558
1559
1560
1561
1562
1563
1564
1565
1566
1567
1568
1569
1570
1571
1572
1573
1574
1575
1576
1577
1578
1579
1580
1581
1582
1583
1584
1585
1586
1587
1588
1589
1590
1591
1592
1593
1594
1595
1596
1597
1598
1599
1600
1601
1602
1603
1604
1605
1606
1607
1608
1609
1610
1611
1612
1613
1614
1615
1616
1617
1618
1619
1620
1621
1622
1623
1624
1625
1626
1627
1628
1629
1630
1631
1632
1633
1634
1635
1636
1637
1638
1639
1640
1641
1642
1643
1644
1645
1646
1647
1648
1649
1650
1651
1652
1653
1654
1655
1656
1657
1658
1659
1660
1661
1662
1663
1664
1665
1666
1667
1668
1669
1670
1671
1672
1673
1674
1675
1676
1677
1678
1679
1680
1681
1682
1683
1684
1685
1686
1687
1688
1689
1690
1691
1692
1693
1694
1695
1696
1697
1698
1699
1700
1701
1702
1703
1704
1705
1706
1707
1708
1709
1710
1711
1712
1713
1714
1715
1716
1717
1718
1719
1720
1721
1722
1723
1724
1725
1726
1727
1728
1729
1730
1731
1732
1733
1734
1735
1736
1737
1738
1739
1740
1741
1742
1743
1744
1745
1746
1747
1748
1749
1750
1751
1752
1753
1754
1755
1756
1757
1758
1759
1760
1761
1762
1763
1764
1765
1766
1767
1768
1769
1770
1771
1772
1773
1774
1775
1776
1777
1778
1779
1780
1781
1782
1783
1784
1785
1786
1787
1788
1789
1790
1791
1792
1793
1794
1795
1796
1797
1798
1799
1800
1801
1802
1803
1804
1805
1806
1807
1808
1809
1810
1811
1812
1813
1814
1815
1816
1817
1818
1819
1820
1821
1822
1823
1824
1825
1826
1827
1828
1829
1830
1831
1832
1833
1834
1835
1836
1837
1838
1839
1840
1841
1842
1843
1844
1845
1846
1847
1848
1849
1850
1851
1852
1853
1854
1855
1856
1857
1858
1859
1860
1861
1862
1863
1864
1865
1866
1867
1868
1869
1870
1871
1872
1873
1874
1875
1876
1877
1878
1879
1880
1881
1882
1883
1884
1885
1886
1887
1888
1889
1890
1891
1892
1893
1894
1895
1896
1897
1898
1899
1900
1901
1902
1903
1904
1905
1906
1907
1908
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
2043
2044
2045
2046
2047
2048
2049
2050
2051
2052
2053
2054
2055
2056
2057
2058
2059
2060
2061
2062
2063
2064
2065
2066
2067
2068
2069
2070
2071
2072
2073
2074
2075
2076
2077
2078
2079
2080
2081
2082
2083
2084
2085
2086
2087
2088
2089
2090
2091
2092
2093
2094
2095
2096
2097
2098
2099
2100
2101
2102
2103
2104
2105
2106
2107
2108
2109
2110
2111
2112
2113
2114
2115
2116
2117
2118
2119
2120
2121
2122
2123
2124
2125
2126
2127
2128
2129
2130
2131
2132
2133
2134
2135
2136
2137
2138
2139
2140
2141
2142
2143
2144
2145
2146
2147
2148
2149
2150
2151
2152
2153
2154
2155
2156
2157
2158
2159
2160
2161
2162
2163
2164
2165
2166
2167
2168
2169
2170
2171
2172
2173
2174
2175
2176
2177
2178
2179
2180
2181
2182
2183
2184
2185
2186
2187
2188
2189
2190
2191
2192
2193
2194
2195
2196
2197
2198
2199
220

ABSTRACT

A braking assembly (1) for bicycles (B) is disclosed, particularly suitable for training of cyclists, constrained to a support structure (2; F) and provided with braking means (3) cooperating with the driving wheel (R) of said bicycle (B) to
5 generate a resisting torque opposing the rotation given by the cyclist to the driving wheel (R) through the pedals (P). The braking means (3) comprise a flexible belt (4) with mainly longitudinal development arranged with perimetral adherence to tyre (C) of the driving wheel (R) for at least a portion of its circumference and wound as a closed loop between at least a couple of
10 revolving rollers (5, 6), one of said rollers being operatively connected to energy dissipation means (7).



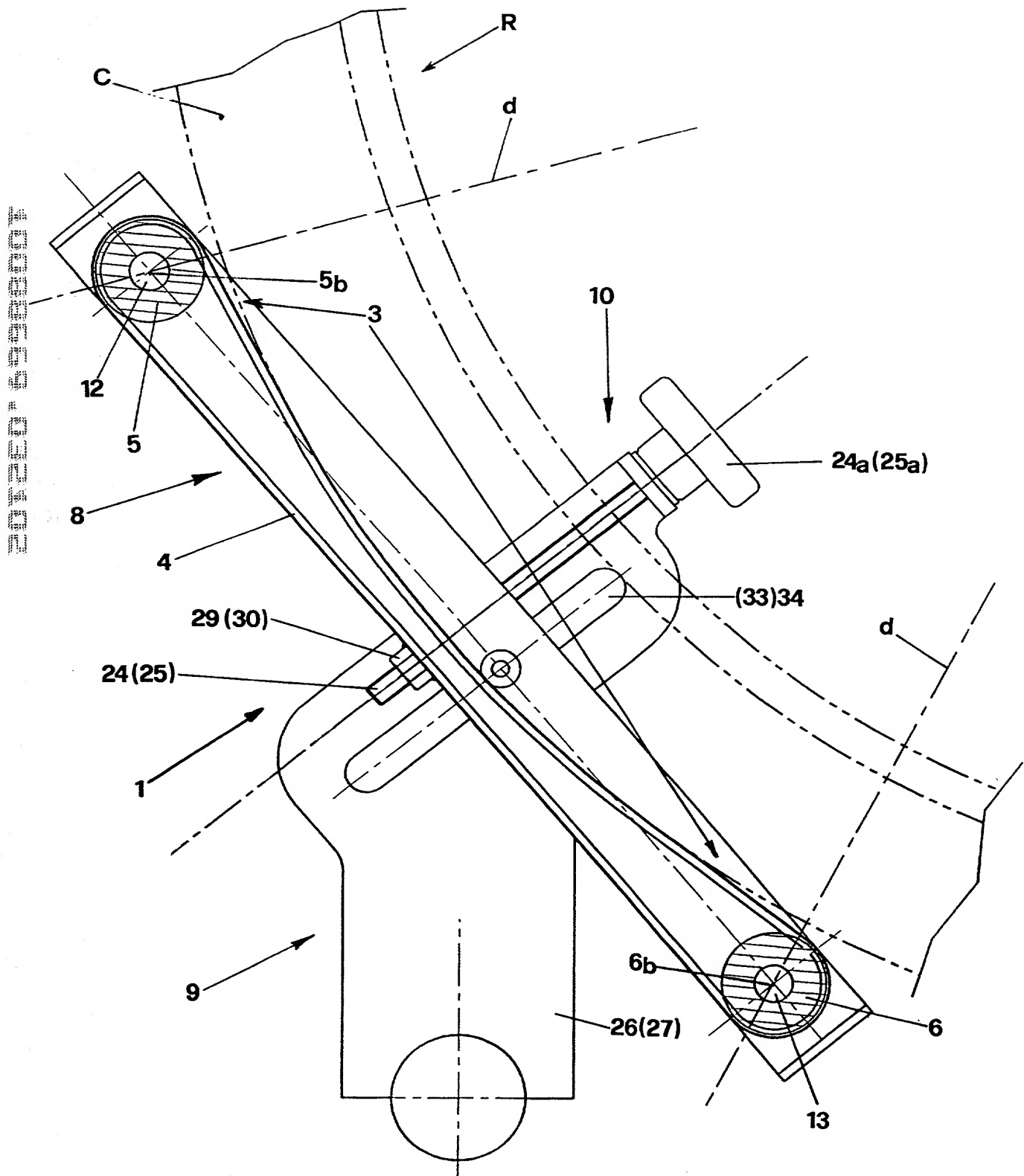
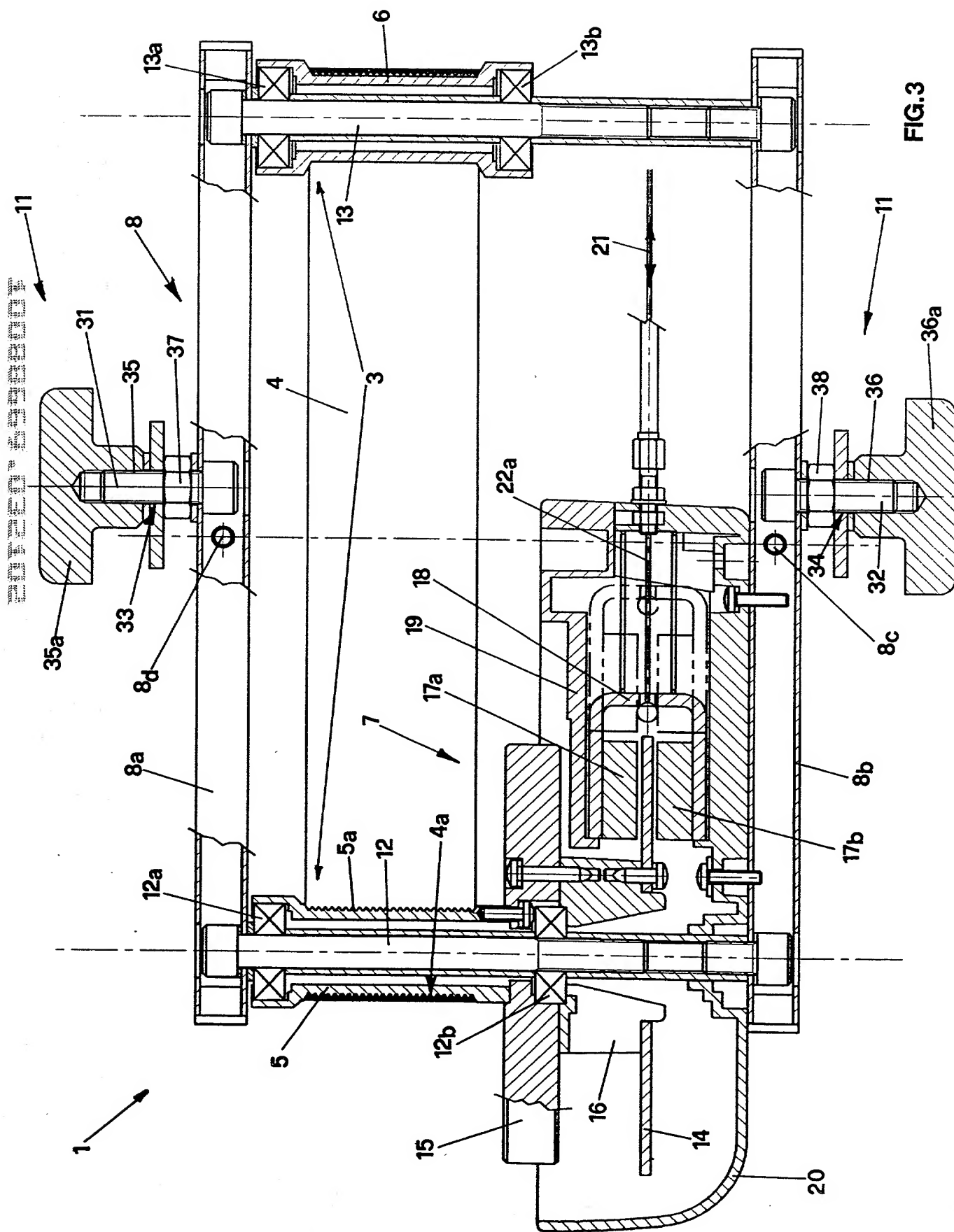


FIG. 2



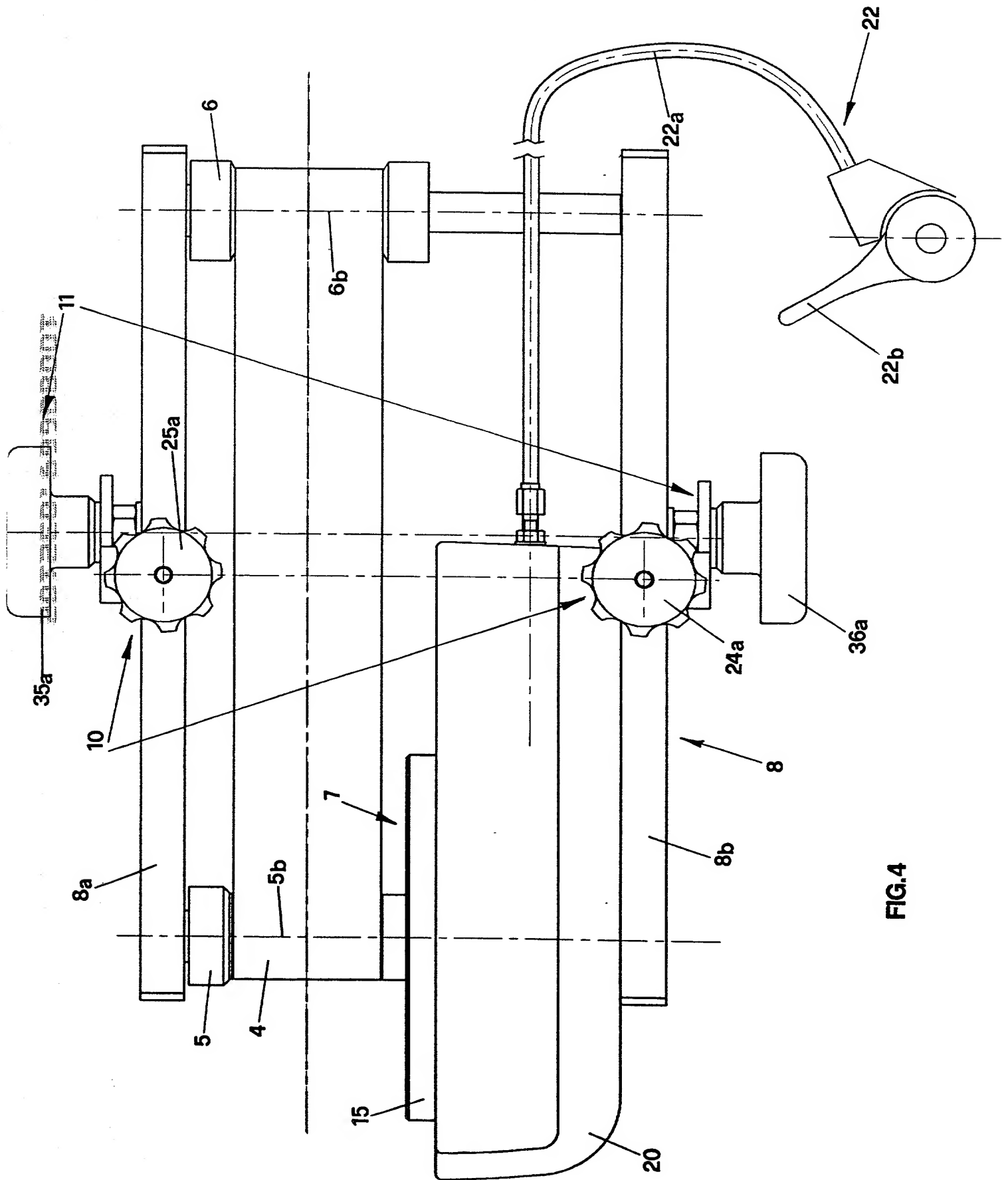


FIG.4

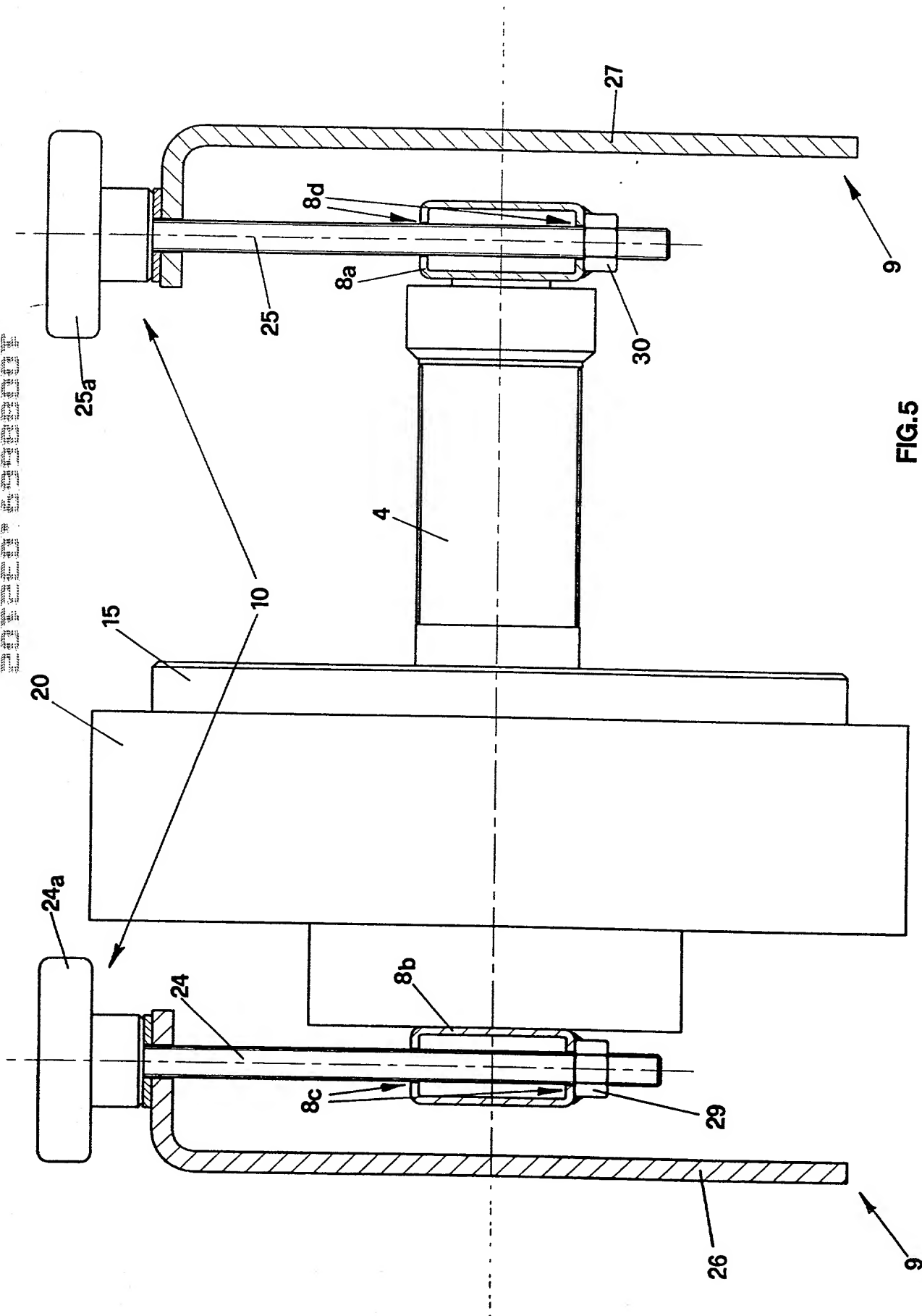
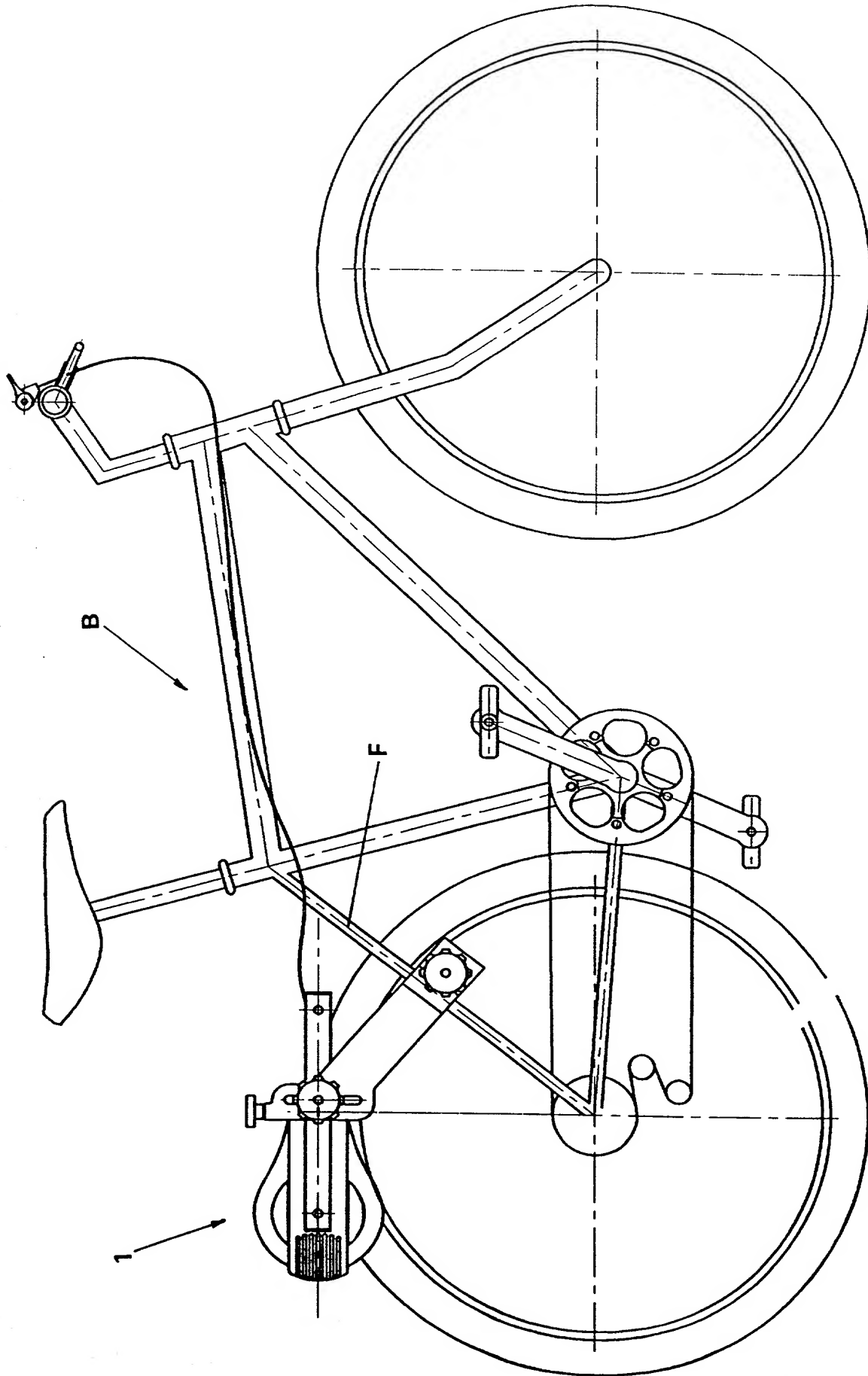


FIG. 5



10/088669

COMBINED DECLARATION AND POWER OF ATTORNEY
FOR UTILITY PATENT APPLICATION (Includes PCT)

Attorney Docket No. _____

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name; that

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural inventors are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: BRAKING UNIT FOR BICYCLES

the specification of which (check one): ☒ is attached hereto.

☐ was filed on _____ as Application Serial No. _____ and was amended on _____.

☐ was filed as PCT international application no. _____ and was amended under PCT Article 19 on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I do not know and do not believe the claimed invention was ever known or used in the United States of America before my or our invention thereof, or patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months prior to this application.

I hereby claim foreign priority benefits under Title 35, United States Code §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application(s) on which priority is claimed:

Prior Foreign Application(s)

Priority Claimed

<u>VI99A000202</u> (Number)	<u>ITALY</u> (Country)	<u>October 1, 1999</u> Day/Month/Year Filed	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ Day/Month/Year Filed	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ Day/Month/Year Filed	<input type="checkbox"/> Yes	<input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, §119 (e) of any United States provisional application(s) listed below:

Application No. _____	Day/Month/Year Filed _____	Application No. _____	Day/Month/Year Filed _____
-----------------------	----------------------------	-----------------------	----------------------------

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Application Serial No. _____	Filing Date _____	Status (patented, pending, abandoned) _____
------------------------------	-------------------	---

Application Serial No. _____

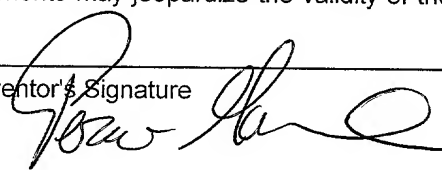
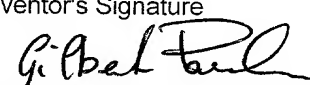
Filing Date _____

Status (patented, pending, abandoned) _____

10 I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith; Lawrence R. Radanovic, Reg. No. 23,077; Richard H. Tushin, Reg. No. 27,297; Donald N. Huff, Reg. No. 27,561; John P. DeLuca, Reg. No. 25,505; Sandra S. Snapp, Reg. No. 41,444; Charles Rutherford, Reg. No. 18,933; Robert L. Kelly, Reg. No. 31,843; Kevin M. Hinman, Reg. No. 35,193; Ernest E. Helms, Reg. No. 29,721 and William F. Kolakowsky, Reg. No. 41,908, all of Dykema Gossett PLLC. Direct all telephone calls to telephone no. **(202) 522-8600** and faxes to **(202) 522-8669**.

Address all correspondence to **Dykema Gossett PLLC, Suite 300 West, 1300 I Street, N.W., Washington, D.C. 20005-3306.**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Sole, First Inventor <u>PERUZZO Massimo</u>	Inventor's Signature 	Date March 1, 2002
Residence: VIA S. PIO X, 44 – 36027 <u>ROSA</u> (VI) - ITALY <i>ITX</i>		Citizenship ITALIAN
Post Office Address: SAME AS ABOVE		
Full Name of Second, Joint Inventor <u>PAROLIN Gilberto</u>	Inventor's Signature 	Date March 1, 2002
Residence: VIA T. ZANON, 31 – 36028 <u>ROSSANO VENETO</u> (VI) - ITALY <i>ITX</i>		Citizenship ITALIAN
Post Office Address: SAME AS ABOVE		

Attorney's Docket No: _____

Applicant or Patentee: _____

Serial or Patent No.: _____

Filed or Issued: _____

Title: BRAKING UNIT FOR BICYCLES

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 C.F.R. §1.9(f) AND 1.27 (c)) - SMALL BUSINESS CONCERN

I hereby declare that I am

- ☒ the owner of the small business concern identified below:
☐ an official of the small business concern empowered to act
on behalf of the concern identified below:

NAME OF CONCERN: OFFICINE PAROLIN S.N.C. DI PAROLIN STEFANO, PERUZZO
MASSIMO E C.

ADDRESS OF CONCERN: VIA RAMON, 10 – 36028 ROSSANO VENETO (VI) – ITALY

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 37 C.F.R. §121.3-18, and reproduced in 37 C.F.R. §1.9(d), for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled
BRAKING UNIT FOR BICYCLES

by inventors PERUZZO Massimo and PAROLIN Gilberto

described in:

☒ the specification filed herewith

☐ application serial no. _____, filed _____

☐ patent no. _____, issued _____

If the rights held by the above-identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed below* and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 C.F.R. §1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 C.F.R. §1.9(d), or a nonprofit organization under 37 C.F.R. §1.9(e). *NOTE. Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities (37 C.F.R. §1.27)

FULL NAME _____

ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NON PROFIT ORGANIZATION

FULL NAME _____

ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NON PROFIT ORGANIZATION

FULL NAME _____

ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NON PROFIT ORGANIZATION

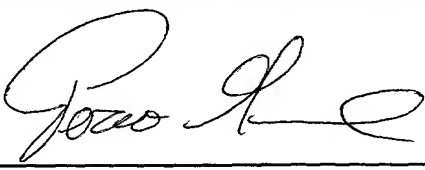
I acknowledge the duty to file in this application or patent notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 C.F.R. §1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING PERUZZO Massimo

TITLE OF PERSON OTHER THAN OWNER _____

ADDRESS OF PERSON SIGNING VIA S. PIO X, 44 - 36027 ROSA' (VI) - ITALY

SIGNATURE X  DATE February 28, 2002